As in the magnetic investigations, one has to keep in mind that the decomposition of incorporated organic material may also have an influence on the resistivity measurements.

Conclusion

On heating, especially at temperatures higher than 200°C, nearly all gold deposits show changes in their properties and most of these changes are irreversible. The magnetic behaviour of gold-cobalt alloys is particularly important since electrodeposits which are non-magnetic in the as-deposited condition can become ferro-magnetic following particular heat treatments. This behaviour is not observed in corresponding gold-nickel deposits.

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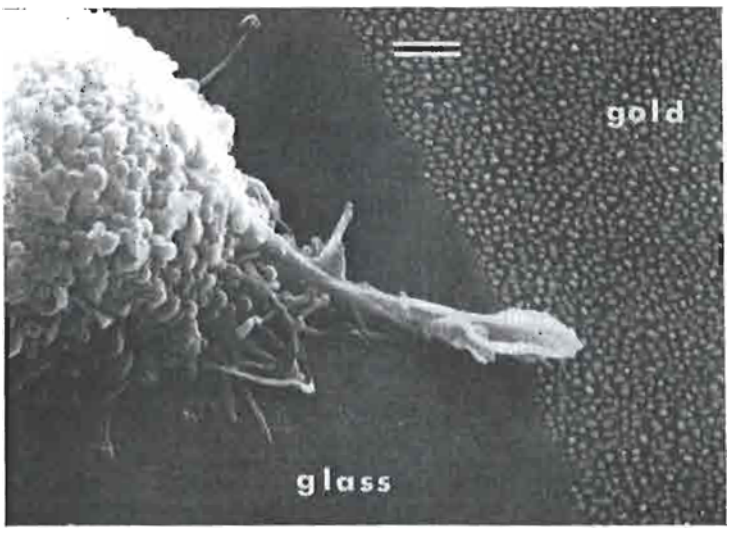
Lamellipodia Prefer Gold

Evidence that single embryonic cells are capable of examining their surroundings and of moving to preferred sites for proliferation has been accumulating. Some kind of exploratory organ appears to be able to detect a favourable area and then to bring about a movement in its direction. An intriguing piece of research sponsored by the National Cancer Institute and carried out by Dr Günter Albrecht-Buehler at the Cold Spring Harbor Laboratory, New York (*J. Cell Biology*, 1976, **69**, 275–286), has in fact shown that minute fibrous projections which he calls "filipodia", about 2 μm in diameter and ranging from 2 to 30 μm in length, emerge from the surface of a cell and perform a rapid scanning motion until they attach themselves to the substrate. By using a glass substrate having parts of its surface coated with an evaporated and sintered film of gold, he found that when some of the filipodia made contact with a gold-coated area the cell then extended preferentially towards the gold by means of undulating projections called lamellipodia, most of the cells being found on the gold area after an hour or two.

The mechanism of this preferential movement is as yet unresolved; it is likely, however, that the filipodia react to a certain quality of the substrate and then promote the extension of lamellipodia in the direction in which this quality has been detected.



This scanning electron microscope photograph by Dr Albrecht-Buehler shows a single cell that has settled on a glass surface close to the edge of an evaporated and sintered gold film. Initial contact with the gold by the exploratory filipodia is followed within a few minutes by the projection of a lamellipodium which reaches out to the gold. After a further hour or two the cell will migrate to the gold area. The bar in the photograph represents 2 μm